Thought," by George Idle, Esq., M.I.N.A., delivered at the Royal College of Science, Dublin, on January 27, which suggests at least the position which scientific work should hold in a modern state. Moreover, the lay press is beginning to consider the subject, entirely with sympathy for the scientific worker; and we should like to give special commendation to the efforts being made by the *Morning Post* in its series of articles and letters published during May and June.

The question now arises as to what had best be done under the circumstances; and it has been suggested that those who wish to do so would be wise to form a union of some kind with a program specifically aimed at improving the position of the workers themselves. At present there are numerous societies which are supposed, more or less indirectly, to attend to this very necessary work, but which certainly have not achieved much success in it. We should therefore like to receive any suggestions upon the subject, together with the names of those who may feel inclined to join such a movement if the program ultimately decided upon meets with their approval.—*Science Progress.*

SCIENTIFIC BOOKS

The Osteology of the Chalicotheroidea, with special reference to a mounted skeleton of Moropus elatus Marsh, now installed in the Carnegie Museum. By W. J. HOLLAND and O. A. PETERSON. Memoirs of the Carnegie Museum, Vol. III., No. 2. Pittsburgh, December, 1913, pp. i–xvi, 189–411, with 115 text figures, and plates XLVIII.–LXXVII.

The Chalicotheroidea, a curious aberrant group of Perissodactyl ungulates wherein the hoof bones have departed widely from the normal type, becoming laterally compressed, deeply fissured and claw-like, form the subject of this volume. The Carnegie Museum was fortunate in securing through the efforts of Messrs. O. A. Peterson and W. H. Utterbach an almost complete skeleton of the remarkable *Moropus elatus* Marsh, by means of which the entire osteology of a typical member of the group has been worked out.

The locality of this specimen lay not far from that whence one of Professor Marsh's collectors, H. C. Clifford, secured the somewhat fragmental material which constitutes the type of the species *elatus*. Clifford's discovery in the spring of 1875 was destined to be followed years later, in 1904, by the finding on the upper Niobrara River in western Nebraska of one of the most remarkable bone deposits in the world, the Agate Spring quarry of Lower Miocene age; and it is this locality, which has been worked successively by the representatives of several institutions, Carnegie Museum, American Museum, University of Nebraska, Amherst and Yale, which has produced a number of skulls and skeletons of this type, among them the one forming the basis of this memoir. While Dr. Holland is the senior author of the memoir, Mr. Peterson is credited with the recovery of much of the material, its preparation for study and description and the partial preparation of those sections of the paper which relate to the appendicular skeleton, and to the skull and dentition.

The introductory chapter gives a history of the excavations at the Agate Spring quarries and tells of the conditions of deposition as follows (pp. 194–95):

"The 'Agate Spring quarries' . . . are situated in the Lower Harrison Beds (Miocene) and contain a vast quantity of the remains of extinct mammalia many of which, before the specimens were firmly embedded in the matrix, had suffered more or less displacement. It is rarely that the bones are found collocated in their true order, though in some instances a dozen or more vertebræ may occur in regular series, with the corresponding ribs attached to them, or the bones of an entire limb may be found in place. The region, at the time when the bones were deposited, was probably a great plain, traversed by a broad and shallow river, like the Platte, or the Missouri, subject at times to overflows. It was a region of flat alluvial lands, which may in the summers have been in part dried, leaving here and there pools of water to which the animals

of the region resorted, as in South Africa at the present time herds of ungulates resort to such places. . . . At these pools the beasts, which roamed over the wide plain, came to drink, and here they died, as the result of age, or as they fell under the teeth and claws of carnivora. It may also have been . . . that at this particular point there was a ford, or crossing of the river, much resorted to by migrating herds of animals, and here many, especially younger animals, were mired in quicksands, and drowned."

Chapter I. defines the Chalicotheroidea, sketches briefly the literary history of the group, and names and defines the three subfamilies, Schizotheriinæ, Moropodinæ and Macrotheriinæ; while Chapter II. characterizes the various genera included under each subfamily, both the American and Old World forms, as well as several genera formerly included under the Chalicotheroidea but now referred to other orders and suborders.

In Chapter III. a résumé of the species is given, although, with the Old World types especially, a thorough revision other than of the genotypes was not practicable; at the same time the comprehensive list is of great value for future work. Chapter IV. treats very fully each species of the genus *Moropus,* discussing each one under the several headings of name and synonyms, of what the type consists and its whereabouts, the geological horizon, and the specific characters. The last named includes not only the original description quoted in full, but an adequate supplemental description as well.

Chapter V., embracing as it does 143 pages, is really the *pièce de résistance* of the entire volume, and presents an elaborate morphological study of *Moropus,* based very largely upon the skeleton of *M. elatus* already referred to, which has been mounted in the Carnegie Museum. The assembled skeleton shows certain horse-, rhinoceros- and titanothere-like features, while the feet are so like those of the Edentata as to have been the cause of the inclusion of *Moropus* in that order before the association with other anatomical features was known. The restoration of *Moropus* based upon the articulated skeleton is given in the form of a statuette prepared by Theodore A. Mills under the supervision of the authors, and presents a curious admixture of horse-like head, tapir-like body, and leonine feet. Of its probable habits and the meaning of the peculiar adaptive features the authors are perhaps wisely silent, though a host of questions present themselves upon viewing this grotesque re-creation.

Chapter VI. gives an elaborately studied bibliography, in which the essential facts of each paper are analyzed, showing a very intimate knowledge of the literature of the subject on the part of the authors.

This work, on the whole, is entitled to the highest commendation as an elaborate, painstaking piece of research which will prove of the greatest value to future students of the group, and the fine appearance of the volume is fully commensurate with its importance.

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Atlas und Lehrbuch wichtiger tierischer Parasiten und ihrer Ueberträger mit besonderer Berücksichtigung der Tropenpathologie. By Prof. Dr. R. O. Neumann (Bonn) and Dr. Martin Mayer (Hamburg). Lehmann's Medizinische Atlanten. J. F. Lehmann's Verlag in München. Bd. XI., vi + 580 + 93 pp., 45 colored plates with 1,300 figures and 237 figs. in text, 1914. Geb. M. 40.

The high standard of excellence established in the previous volumes of Lehmann's series of atlases, which includes, among other well-known texts, Sobotta's superb work on anatomy and histology, is well maintained in Neumann and Mayer's recently published "Atlas und Lehrbuch wichtiger tierischer Parasiten." The rapid growth of interest in tropical diseases, the recent expansion of the sciences of protozoology and parasitology, the increasing number of institutions devoted to research in these fields, and the rapid rise of applied hygiene and preventive medicine, have created both the possibility and the need for such a work as this. One has but to glance through the group